

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1-6 Cancelled

7. (New) An assay to screen anti-malarial drugs by testing for binding of a test compound with plasmodium 90 kDa heat shock protein which comprises:

- (a) immobilizing said test compound covalently on a matrix;
- (b) reacting saponin-free Plasmodial trophozoite lysate with said covalently immobilized test compound;
- (c) detecting a plasmodium 90 kDa heat shock protein bound test compound;
- (d) measuring growth of *Plasmodium falciparum* in the presence of said protein bound test compound; and
- (e) comparing the growth of *P. falciparum* in the presence of said protein bound test compound to the growth of *P. falciparum* in the absence of said protein bound test compound, wherein a decrease in said measured growth of *P. falciparum* exposed to said protein bound test compound as compared to the growth of *P. falciparum* not exposed to said protein bound test compound is indicative of said protein bound test compound being an anti-malarial drug.

8. (New) The assay as claimed in claim 7, wherein the plasmodium 90 kDa heat shock protein is from *Plasmodium falciparum*.

9. (New) The assay as claimed in claim 7, wherein said matrix is selected from the group consisting of agarose and carboxymethylated dextran.

10. (New) The assay as claimed in claim 9, wherein said carboxymethylated dextran matrix is attached to a gold surface.

11. (New) The assay as claimed in claim 7, wherein said detection of a plasmodium 90 kDa heat shock protein bound test compound is performed by methods comprising immunochemical methods, radiochemical methods and non-radioactive methods.

12. (New) The assay as claimed in claim 11, wherein said radiochemical methods are selected from a group comprising 2D gel electrophoresis and fluorography.

13. (New) The assay as claimed in claim 7, wherein measuring growth of *Plasmodium falciparum* comprises measuring the number of *P. falciparum* ring forms growing into *P. falciparum* trophozoite forms.

14. (New) The assay as claimed in claim 13, wherein measuring the number of *P. falciparum* ring forms growing into *P. falciparum* trophozoite forms comprises measuring said ring forms and said trophozoite forms using flow cytometry.

15. (New) An assay to screen anti-malarial drugs by testing for binding of a test compound with plasmodium 90 kDa heat shock protein which comprises:

(a) immobilizing a test compound derivatized with a plurality of amine groups, said test compound is immobilized at a concentration of 20 mM in 8% dimethyl sulfoxide (DMSO), said test compound being immobilized on a surface of a carboxymethylated dextran matrix, using 1-ethyl-3-(dimethylaminopropyl) carbodiimide hydrochloride, N-hydroxysuccinimide and ethanolamine HCl;

(b) blocking said test compound not immobilized on said matrix surface using 1M ethanolamine;

(c) regenerating said matrix surface by a 50 s pulse of 0.5% SDS flowing at 10 µL/min followed by preparing a saponin-freed Plasmodial trophozoite lysate in an equal volume of Tris-HCl buffer (TNESV buffer) for binding analysis;

(d) clarifying said lysate by centrifuging said lysate at 20,000 g for 20 min and evaluating the binding of said test compound with a trophozoite lysate

protein by passing the lysate at a flow rate of 1 μ L/min in TNESV buffer and measuring a change in refractive index as response units;

(e) detecting a plasmodium 90 kDa heat shock protein bound test compound;

(f) measuring growth of *Plasmodium falciparum* in the presence of said protein bound test compound; and

(g) comparing the growth of *P. falciparum* in the presence of said protein bound test compound to the growth of *P. falciparum* in the absence of said protein bound test compound, wherein a decrease in said measured growth of *P. falciparum* exposed to said protein bound test compound as compared to the growth of *P. falciparum* not exposed to the protein bound test compound is indicative of said protein bound test compound being an anti-malarial drug.

16. (New) The assay as claimed in claim 15, wherein said test compound of unknown structure is derivatized with a plurality of biotin molecules using photobiotin acetate followed by analysis using a streptavidin coated surface.